

ABSTRACT

In accordance with the invention, a tunable subwavelength resonant grating filter comprises a liquid crystal cell having a pair of major surface walls. One wall of the cell is a coated subwavelength grating of a SRGF. The coating comprises a polymer layer to fill the grating trenches and a surfactant layer to facilitate uniform alignment of the liquid crystal material. The refractive index of the LCD material in the cell can then be electrically or thermally adjusted to tune the resonant wavelength.